I claim:

1. A switching power conversion circuit comprising:

a saturable load assembly composed of a load and a saturable reactor;

a first switching inductance coil assembly formed by series connecting a first switch and a first coil, said first switching inductance coil assembly being connected to said saturable load assembly and a first potential; and

a second switching inductance coil assembly formed by series connecting a second switch and a second coil, said second switching inductance coil assembly being connected to said first switching inductance coil assembly and a second potential, said first and second switching inductance coil assemblies being magnetically coupled together;

whereby when both said first and second switches are on, said first potential and said second potential can magnetize said first and second coils, and when said first and second switches are alternately off, the magnetic energy of said first and second coils can be transferred to said saturable load assembly, and the saturation effect of said saturable reactor can be exploited to let the terminal potential of said opened switch be zero after a certain period of time so that said opened switch will be on at this time.

2. The switching power conversion circuit as claimed in claim 1, wherein each of said first coil and said second coil is composed of a primary inductance coil.

3. The switching power conversion circuit comprising as claimed in claim 1, wherein said load is connected via a rectifying circuit.

4. The switching power conversion circuit comprising as claimed in claim 1,

wherein said load or said saturable load assembly is connected via a transformer.

5. The switching power conversion circuit comprising as claimed in claim 4, wherein said saturable reactor and said transformer can be replaced with a saturable transformer.

6. A switching power conversion circuit comprising:

a transformer comprising a first primary coil, a second primary coil, and a secondary coil connected to a load;

a saturable reactor connected to any one or a series assembly of said coils of said transformer;

a first switching primary coil assembly formed by series connecting a first switch and said first primary coil; and

a second switching primary coil assembly formed by series connecting a second switch and said second primary coil, said first and second switching primary coil assemblies being series connected together with their contact being connected to a reactor, the other terminal of said reactor being connected to a first potential, the other terminals of said first and second switching primary coil assemblies being connected to a reference potential;

whereby when both said first and second switches are on, said first and second primary coils will be equivalently short-circuited due to mutual induction, and said first potential can thus magnetize said reactor, and when said first and second switches are alternately off, the magnetic energy of said reactor can be transferred to said first and second primary coils, and the saturation effect of said saturable reactor can be exploited to let the terminal

potential of said opened switch be zero after a certain period of time so that said opened switch will be on at this time.

7. The switching power conversion circuit comprising as claimed in claim 6, wherein a rectifying circuit is connected between said secondary coil of said transformer and said load.

8. The switching power conversion circuit comprising as claimed in claim 6, wherein a capacitor is further connected to any one or a series assembly of said coils of said transformer.

9. The switching power conversion circuit comprising as claimed in claim 6, wherein said saturable reactor and said transformer can be replaced with a saturable transformer.

10. A saturable transformer with a magnetic core including a magnetic flux path, a section of said magnetic core having a smaller cross-sectional area than other parts so that said section of said magnetic core can saturate earlier than other parts under the same magnetic flux.